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Inventors: **Chen et al.**
Serial No.:   **09/940,227**
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This listing of the claims will replace all prior versions and listings of claims in the application:

Listing of the claims:

Claim 1 (original): A LSG comprising:

(a) a polynucleotide of SEQ ID NO:1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, or 74, or a variant thereof;

(b) a polypeptide expressed by a polynucleotide of SEQ ID NO:1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, or 74, or a variant thereof; or

(c) a polynucleotide which is capable of hybridizing under stringent conditions to the antisense sequence of SEQ ID NO: 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20 or 74.

Claim 2 (original): The LSG of claim 1 wherein the polypeptide comprises SEQ ID NO: 75, 76, 77, 78, 79, 80, 81, 82, 83, or 84.

Claim 3 (original): A method for diagnosing the presence of lung cancer in a patient comprising:

(a) determining levels of a LSG of claim 1 in cells, tissues or bodily fluids in a patient; and

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(b) comparing the determined levels of LSG with levels of LSG in cells, tissues or bodily fluids from a normal human control, wherein a change in determined levels of LSG in said patient versus normal human control is associated with the presence of lung cancer.

Claim 4 (original): A method of diagnosing metastases of lung cancer in a patient comprising: .

(a) identifying a patient having lung cancer that is not known to have metastasized;

(b) determining levels of a LSG of claim 1 in a sample of cells, tissues, or bodily fluid from said patient; and

(c) comparing the determined LSG levels with levels of LSG in cells, tissue, or bodily fluid of a normal human control, wherein an increase in determined LSG levels in the patient versus the normal human control is associated with a cancer which has metastasized.

Claim 5 (original): A method of staging lung cancer in a patient having lung cancer comprising:

(a) identifying a patient having lung cancer;

(b) determining levels of a LSG of claim 1 in a sample of cells, tissue, or bodily fluid from said patient; and

(c) comparing determined LSG levels with levels of LSG in

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cells, tissues, or bodily fluid of a normal human control, wherein an increase in determined LSG levels in said patient versus the normal human control is associated with a cancer which is progressing and a decrease in the determined LSG levels is associated with a cancer which is regressing or in remission.

Claim 6 (original): A method of monitoring lung cancer in a patient for the onset of metastasis comprising:

(a) identifying a patient having lung cancer that is not known to have metastasized;

(b) periodically determining levels of a LSG of claim 1 in samples of cells, tissues, or bodily fluid from said patient; and

(c) comparing the periodically determined LSG levels with levels of LSG in cells, tissues, or bodily fluid of a normal human control, wherein an increase in any one of the periodically determined LSG levels in the patient versus the normal human control is associated with a cancer which has metastasized.

Claim 7 (original): A method of monitoring a change in stage of lung cancer in a patient comprising:

(a) identifying a patient having lung cancer;

(b) periodically determining levels of a LSG of claim 1 in cells, tissues, or bodily fluid from said patient; and

(c) comparing the periodically determined LSG levels with

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levels of LSG in cells, tissues, or bodily fluid of a normal human control, wherein an increase in any one of the periodically determined LSG levels in the patient versus the normal human control is associated with a cancer which is progressing in stage and a decrease is associated with a cancer which is regressing in stage or in remission.

Claim 8 (original): A method of identifying potential therapeutic agents for use in imaging and treating lung cancer comprising screening compounds for an ability to bind to or decrease expression of a LSG of claim 1 relative to the LSG in the absence of the compound wherein the ability of the compound to bind to the LSG or decrease expression of the LSG is indicative of the compound being useful in imaging and treating lung cancer.

Claim 9 (currently amended): An antibody which specifically binds a cancer cell expressing a polypeptide encoded by a LSG (Lung Specific Gene) comprising SEQ ID NO: 15 of Claim 1.

Claim 10 (currently amended): The An antibody of Claim 9 wherein the which specifically binds a cancer cell expressing a LSG (Lung Specific Gene) polypeptide comprising comprises SEQ ID NO: 75, 76, 77, 78, 79, 80, 81, 82, 83, or 84.

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Claim 11 (original): A method of imaging lung cancer in a patient comprising administering to the patient an antibody of claim 9.

Claim 12 (original): The method of claim 11 wherein said antibody is labeled with paramagnetic ions or a radioisotope.

Claim 13 (original): A method of treating lung cancer in a patient comprising administering to the patient a compound which downregulates expression or activity of a LSG of claim 1.

Claim 14 (original): A method of inducing an immune response against a target cell expressing a LSG of claim 1 comprising delivering to a human patient an immunogenically stimulatory amount of a LSG polypeptide so that an immune response is mounted against the target cell.

Claim 15 (original): The method of claim 14 wherein the LSG polypeptide comprises SEQ ID NO:75, 76, 77, 78, 79, 80, 81, 82, 83 or 84.

Claim 16 (original): A vaccine for treating lung cancer comprising a LSG of claim 1.